

## **Ecological site R073XY115KS Closed Upland Depression**

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### Rangeland health reference sheet

Interpreting Indicators of Rangeland Health is a qualitative assessment protocol used to determine ecosystem condition based on benchmark characteristics described in the Reference Sheet. A suite of 17 (or more) indicators are typically considered in an assessment. The ecological site(s) representative of an assessment location must be known prior to applying the protocol and must be verified based on soils and climate. Current plant community cannot be used to identify the ecological site.

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Approved by	David Kraft
Approval date	
Composition (Indicators 10 and 12) based on	Annual Production

### Indicators

1. **Number and extent of rills:** None

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2. **Presence of water flow patterns:** None

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3. **Number and height of erosional pedestals or terracettes:** None

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4. **Bare ground from Ecological Site Description or other studies (rock, litter, lichen, moss, plant canopy are not bare ground):** 2 percent or less bare ground, with bare patches generally less than 2-3 inches in diameter. Extended drought or long-term ponding can cause bare ground to increase to 10-20 percent or more with bare patches reaching to 6-12 inches in diameter or more.

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5. **Number of gullies and erosion associated with gullies:** None

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6. **Extent of wind scoured, blowouts and/or depositional areas:** None

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7. **Amount of litter movement (describe size and distance expected to travel):** Minimal to short.
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8. **Soil surface (top few mm) resistance to erosion (stability values are averages - most sites will show a range of values):** Stability class rating anticipated to be 5-6 in interspace at soil surface.
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9. **Soil surface structure and SOM content (include type of structure and A-horizon color and thickness):** Average SOM is 2-5%. A-horizon ranges from 0-4 inches. Surface texture is silty clay. Soils are typically deep to very deep, very dark gray (2.5Y 3/1) moist, moderate medium granular and weak medium angular blocky structure; very firm, very hard, moderately sticky, moderately plastic.
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10. **Effect of community phase composition (relative proportion of different functional groups) and spatial distribution on infiltration and runoff:** Diverse grass/forb canopy and root structure reduces raindrop impact, providing increased time for infiltration to occur. This site receives runoff from adjacent sites. Infiltration is regulated more by soil texture and landscape position rather than plant community composition.
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11. **Presence and thickness of compaction layer (usually none; describe soil profile features which may be mistaken for compaction on this site):** Typically none. Physical impact during wet or ponded periods may cause some compaction.
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12. **Functional/Structural Groups (list in order of descending dominance by above-ground annual-production or live foliar cover using symbols: >>, >, = to indicate much greater than, greater than, and equal to):**
- Dominant: Group 1 Dominant cool-season grass 40%; western wheatgrass 500-800, little barley 10-25, squirreltail 0-10.
- Sub-dominant: Group 2 Sedges and Rushes subdominant 23%; sedge 50-100, rush 50-100, spikerush 300-400.
- Group 3 Shortgrasses subdominant 20%; blue grama 200-300, buffalograss 100-200.
- Group 3 warm-season shortgrasses Subdominant 20%; blue grama 200-300, buffalograss 100-200
- Group 4 Other grasses Trace amount 2%
- Other: Group 4 Warm-season midgrasses trace 2%; Fall panicgrass 10-25, tumblegrass 10-25, Fendler threeawn 0-10.
- Group 5 Subdominant Forbs 15%; 300 lbs
- Additional:
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13. **Amount of plant mortality and decadence (include which functional groups are expected to show mortality or decadence):** Typically minimal. Expect some mortality during and following extended drought or extended inundation. Ponding depth, frequency, and duration dictates vegetation composition.
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14. **Average percent litter cover (%) and depth ( in):** 50-65 percent litter cover at 0.25-0.50 inch depth. Litter cover during and following extended drought or inundation ranges from 20-40 percent.
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15. **Expected annual annual-production (this is TOTAL above-ground annual-production, not just forage annual-production):** 1600 lbs/ac low precipitation years, 2000 lbs/ac average precipitation years, 2400 lbs/ac above average precipitation years. After extended drought or the first growing season following wildfire, production may be significantly reduced by 400–700 lbs/ac or more.
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16. **Potential invasive (including noxious) species (native and non-native). List species which BOTH characterize degraded states and have the potential to become a dominant or co-dominant species on the ecological site if their future establishment and growth is not actively controlled by management interventions. Species that become dominant for only one to several years (e.g., short-term response to drought or wildfire) are not invasive plants. Note that unlike other indicators, we are describing what is NOT expected in the reference state for the ecological site:** Invasive plants should not occur in The Reference Plant Community. However, cheatgrass, Russian thistle, kochia, other non-native annuals may invade following extended drought assuming a seed source is available. Blue grama, buffalograss, red threeawn, little barley, buffalobur, and hairy goldaster are the major native (non-invasive) increasers on this site.
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17. **Perennial plant reproductive capability:** The number and distribution of tillers or rhizomes is assessed on perennial plants occupying the evaluation area. No reduction in vigor or capability to produce seed or vegetative tillers given the constraints of climate and herbivory.
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